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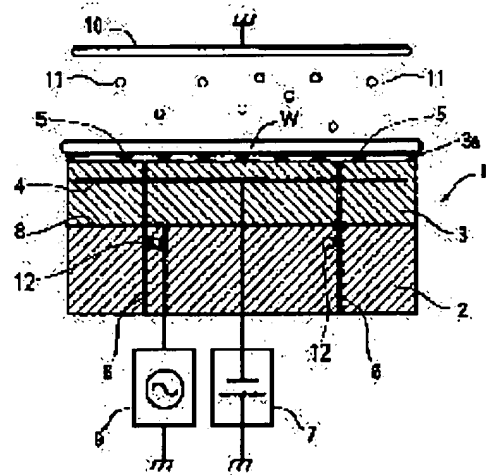
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(54) ELECTROSTATIC CHUCK AND TREATMENT METHOD OF BODY TO BE ATTRACTED WHICH USES SAID CHUCK

(57)Abstract:

PURPOSE: To increase attractive force, enable quick exfoliation of a wafer when voltage application is interrupted, and reduce temperature difference in the surface of a semiconductor wafer, by specifying the volume resistivity of a dielectric layer, and defining the maximum height or the center line average roughness of the attractive surfaces of protrusions formed on the upper surface of the dielectric layer.

CONSTITUTION: In an electrostatic chuck 1, a dielectric 3 is bonded on a metal plate 3, and an inner electrode 4 is buried or clamped in the dielectric layer 3. The volume resistivity of the dielectric layer 3 is set to be lower than or equal to $10^9 \Omega$. An outer peripheral region 3a is formed on the upper surface of the dielectric layer 3, and an attractive region 3b is formed inside the region 3a. A lot of protrusions 5 are formed in the attractive region 3a and turned into the attractive surfaces which directly come into contact with a semiconductor wafer W. The maximum height of the attractive surfaces of the protrusions 5 is set to be $2.0 \mu\text{m}$ or smaller, or the center line average roughness is set to be $0.25 \mu\text{m}$ or smaller. Thereby the area ratio of the part in contact with the wafer is made larger than or equal to 1% and smaller than 10%, so that the attraction and the exfoliation of a wafer are facilitated by turning on and off a voltage.



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